

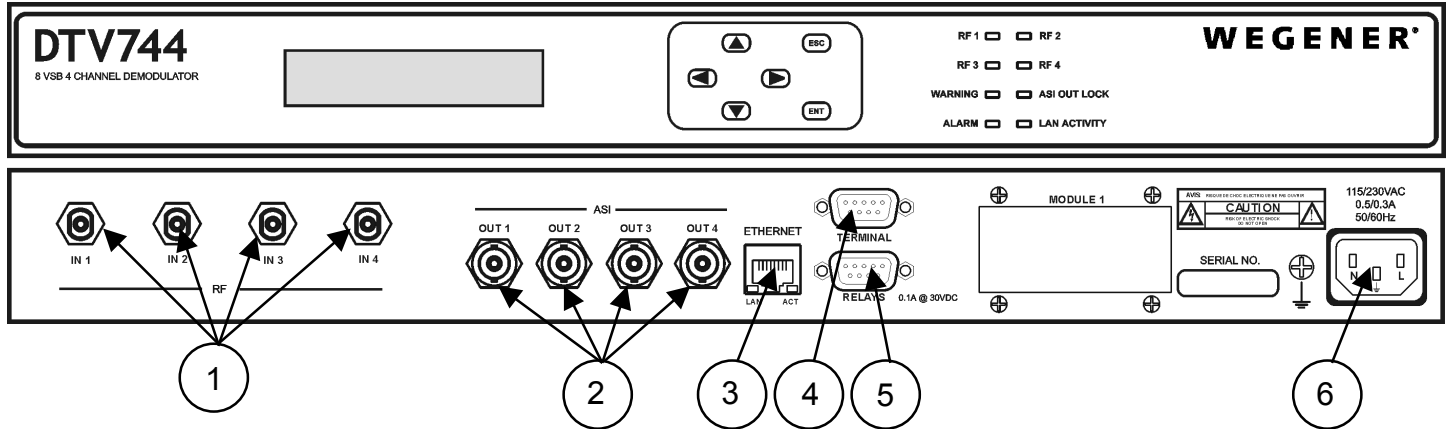
# DTV744 Installation Quick Start Guide

The Wegener Model DTV744 8VSB 4-Channel Demodulator receives VHF/UHF broadcast HDTV 8VSB signals and provides output ASI streams for connection to an advanced cable channel groomer. This guide provides information for setting up and operating the DTV744. Additional information may be found on the Wegener web site at [www.wegener.com/](http://www.wegener.com/) (click the Customer Service tab and follow instructions to access the DTV744 User's Manual).

In addition to this guide, your box should include:

1. DTV744 8VSB 4-Channel Demodulator
2. Power cord
3. UL safety sheet

## Front and Rear Panel Views



## Connector/Pin-out/LED Information

Rear-Panel Connector Descriptions				
Ref	Connector Designation	Type	Signal Name	Description
1	RF In 1, 2, 3, & 4	Type F	RF IN 1, RF IN 2, RF IN 3, & RF IN 4	From VHF/UHF Antenna
2	ASI Out 1, 2, 3, & 4	BNC	ASI OUT 1, ASI OUT 2, ASI OUT 3, & ASI Out 2	To Advanced Cable Channel Groomer, DTV700, or ASI Mux
3	Ethernet	RJ-45 jack	Ethernet_In & Out	To LAN – for Web Interface Control
4	Terminal	DB-9 female	RxD (output) & TxD (input)	To Local Terminal
5	Relays	DB-9 female	Alarm, Warning, & Contact Closures	To Alarm Monitoring
6	115/230 VAC	IEC receptacle	AC Line In	To AC Power Outlet

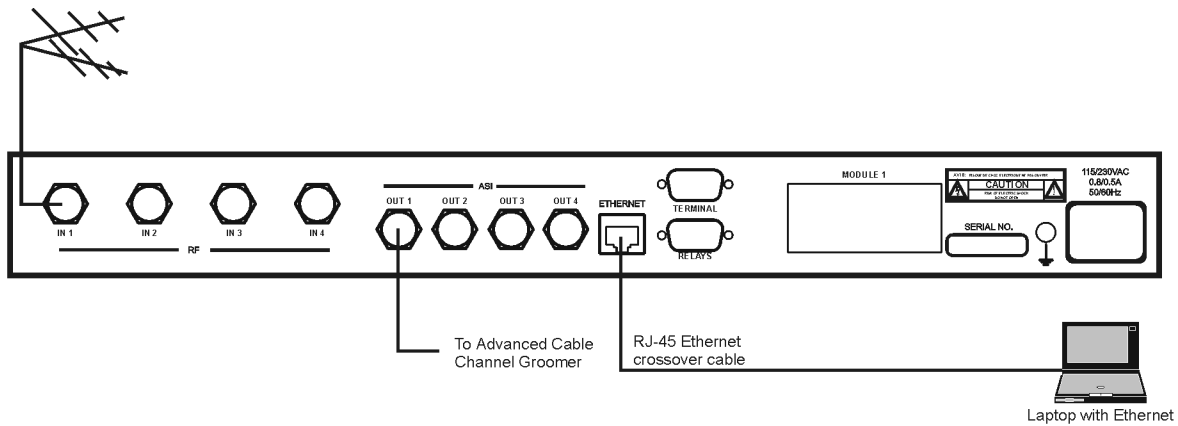
Status Relays Signals(Ref 4)	
Pin #	Function
9	Close on Alarm
4	Alarm COM
8	Close on Warning
3	Warning COM
6	Open on Warning
1	Not used
7	Open on Alarm
2	Not used

LED Indicator Descriptions			
LED	Description	LED	Description
RF 1	<b>ON</b> – Tracking carrier <b>OFF</b> – No carrier	RF 2	<b>ON</b> – Tracking carrier <b>OFF</b> – No carrier
RF 3	<b>ON</b> – Tracking carrier <b>OFF</b> – No carrier	RF 4	<b>ON</b> – Tracking carrier <b>OFF</b> – No carrier
WARNING	<b>ON</b> – See LCD / web browser for details <b>OFF</b> – No Warnings	ASI OUT LOCK	<b>ON</b> – ASI output active <b>OFF</b> – No ASI output
ALARM	<b>ON</b> – See LCD / web browser for details <b>OFF</b> – No alarms	LAN ACTIVITY	<b>BLINKS</b> – parameter is being changed via browser or SNMP

### Program and PSIP Processing

The unit tunes and demodulates ATSC broadcast signals which are converted to ASI output Transport Streams. All program and PSIP data received are passed through unchanged to the output ASI ports.

## Basic System Setup Diagram



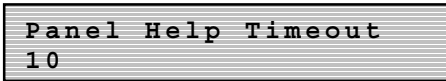
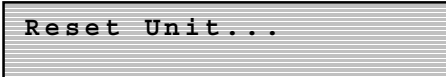
## Front-panel User Interface

Note that from any screen, pressing the ESC key twice will return you to the Home Screen.

Main-level Screens	Second-level Screens
<p><b>Home Screen</b> (rotates through data from each of the four RF inputs)</p> <pre>RF3 CHAN:20 8VSB SNR21.5 ErrSec:0002➔</pre> <p>The channel number, modulation type (8VSB, 64QAM, or 256QAM), signal-to-noise ratio, and errored seconds are displayed for each input.</p> <p>Press the <b>▶</b> key (if displayed) to go to Alarms/Warnings.</p> <p>Press the <b>ENT</b> key to view the second-level Serial Number and Application Software Version Number screen.</p>	<p><b>Serial Number and Application Software Version Number Screen</b></p> <pre>S/N:XXXXXX VER:YYY</pre> <p>Where <b>XXXXXX</b> is the unit's six-digit serial number and <b>YYY</b> is the version number of the unit's currently installed application software.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>
<p><b>Alarms/Warnings</b></p> <pre>View Alarms/Warnings</pre> <p>Press the <b>ENT</b> key to view any active alarms or warnings on the second-level Alarms/Warnings Message screen.</p> <p>Press the <b>▶</b> key to go to Clear Errored Seconds (if counter is non-zero) or Program Setup.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>	<p><b>2<sup>nd</sup>-level Alarms/Warnings Message Screen</b></p> <pre>No Alarms or Warnings</pre> <p>Any active alarms or warnings are described here.</p> <p>Press the <b>▶</b> key to view the next alarm or warning (if more than one).</p> <p>Press the <b>ESC</b> key to return to the Alarms/Warnings screen.</p>
<p><b>Clear Errored Seconds</b></p> <pre>Clear Errored Secs Press&lt;ENT&gt;</pre> <p>This screen only appears if the errored seconds counter is non-zero. Otherwise the next screen, Program Setup is displayed.</p> <p>Press the <b>ENT</b> to clear the errored seconds counter.</p> <p>Press the <b>▶</b> key to go to the Input Setup screen.</p> <p>Press the <b>◀</b> key to go to Alarms/Warnings.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>	

Main-level Screens	Second-/Third-level Screens
<p><b>Input Setup</b></p> <div data-bbox="198 201 644 279" style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Input Setup...</b> </div> <p>Press the <b>ENT</b> key to bring up the second-level Program Input screen.</p> <p>Press the <b>▶</b> key to go to Program Status.</p> <p>Press the <b>◀</b> key to go to Clear Errored Seconds (if counter is non-zero) or Alarms/Warnings.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>	<p><b>2<sup>nd</sup>-level RF Input</b></p> <div data-bbox="935 186 1382 264" style="border: 1px solid black; padding: 5px; text-align: center;"> <b>RF Input X</b> </div> <p>Where <b>X</b> is the RF port number.</p> <p>Press <b>ENT</b> to go to the third-level Input Setup Screens below and use the <b>▲</b> or <b>▼</b> keys to select &lt;ON&gt; or &lt;OFF&gt;, adding or removing this program to/from the output stream. Press <b>ENT</b> again to confirm.</p> <p>Press the <b>▶</b> key to go to the next RF Input screen (1 through 4).</p> <p>Press the <b>ESC</b> key to return to the Input Setup screen.</p> <hr/> <p style="text-align: center;"><b>3<sup>rd</sup>-level Tuner Enable</b></p> <div data-bbox="935 552 1382 627" style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Tuner Enable:</b>  <b>ON</b> </div> <p>Press the <b>ENT</b> key to toggle between ON and OFF, enabling or disabling the tuner.</p> <p>Press the <b>▶</b> key to go to the Channel Number Selection screen.</p> <p>Press the <b>ESC</b> key to return to the second-level RF Input screen.</p> <hr/> <p style="text-align: center;"><b>3<sup>rd</sup>-level Channel Number Selection</b></p> <div data-bbox="935 840 1382 915" style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Channel Number: XX</b> </div> <p>Where <b>XX</b> is the current channel number.</p> <p>Press <b>ENT</b> to enter the edit mode and use the <b>▲</b> or <b>▼</b> keys to change the channel number. Press <b>ENT</b> again to confirm your selection or <b>ESC</b> to cancel changes.</p> <p>Press the <b>▶</b> key to go to the RF Standard screen.</p> <p>Press the <b>◀</b> key to go to the Tuner Enable screen.</p> <p>Press the <b>ESC</b> key to return to the second-level RF Input screen.</p> <hr/> <p style="text-align: center;"><b>3<sup>rd</sup>-level RF Standard</b></p> <div data-bbox="935 1220 1382 1295" style="border: 1px solid black; padding: 5px; text-align: center;"> <b>RF Standard:</b>  <b>Broadcast</b> </div> <p>Press <b>ENT</b> and use the <b>▲</b> or <b>▼</b> keys to toggle the RF Standard between Broadcast and Cable. Press <b>ENT</b> again to confirm your selection or <b>ESC</b> to cancel changes.</p> <p>Press the <b>◀</b> key to go to the Channel Selection screen.</p> <p>Press the <b>ESC</b> key to return to the second-level RF Input screen.</p>

Main-level Screens	Second-/Third-level Screens
<p><b>Program Status</b></p> <div data-bbox="170 184 613 262" style="border: 1px solid black; padding: 5px; text-align: center;">Program Status...</div> <p>Press the <b>ENT</b> key to view the second-level program status screens.</p> <p>Press the <b>▶</b> key to go to Panel Help Timeout.</p> <p>Press the <b>◀</b> key to go to Program Setup.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>	<p><b>2<sup>nd</sup>-level Program Status</b></p> <div data-bbox="933 184 1377 262" style="border: 1px solid black; padding: 5px; text-align: center;">Input Number: X</div> <p>where <b>X</b> is the input port number.</p> <p>Press the <b>ENT</b> key to go to the third-level program status screen.</p> <p>Press the <b>▶</b> key to go to the next input (1 through 4).</p> <p>Press the <b>ESC</b> key to return to the main-level Program Status screen.</p> <hr/> <p><b>3<sup>rd</sup>-level Program Status</b></p> <div data-bbox="933 493 1393 571" style="border: 1px solid black; padding: 5px; text-align: center;">           ProgIn XXXXX AAAAAAA            Out: Y BBBB BBB         </div> <p>where <b>XXXXX</b> is the program number at input, <b>AAAAAAA</b> is the service descriptor for the program, <b>Y</b> is the ASI output port, and <b>BBBBBBB</b> is the available audio on the input for the program (AC-3, MPEG, or MPG/AC3).</p> <p>Press the <b>ESC</b> key to return to the 2<sup>nd</sup>-level Program Status screen.</p>
<p><b>IP Setup</b></p> <div data-bbox="162 850 605 928" style="border: 1px solid black; padding: 5px; text-align: center;">IP Setup...</div> <p>Press the <b>ENT</b> key to go to IP Address Selection.</p> <p>Press the <b>▶</b> key to go to Reset Unit.</p> <p>Press the <b>◀</b> key to go to Panel Help Timeout.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>	<p><b>IP Address Selection</b></p> <div data-bbox="933 840 1377 917" style="border: 1px solid black; padding: 5px; text-align: center;">           IP Address:            0.0.0.0         </div> <p>Press the <b>ENT</b> key and then press the arrow keys to change the IP address. Press the <b>ENT</b> key to confirm the selection or <b>ESC</b> to cancel changes.</p> <p>Press the <b>▶</b> key to go to the Netmask Selection.</p> <p>Press the <b>ESC</b> key to go to IP Setup.</p> <hr/> <p><b>Netmask Selection</b></p> <div data-bbox="933 1165 1377 1243" style="border: 1px solid black; padding: 5px; text-align: center;">           Netmask:            255.255.0.0         </div> <p>Press the <b>ENT</b> key and then press the arrow keys to change the Netmask. Press the <b>ENT</b> key to confirm the selection or <b>ESC</b> to cancel changes.</p> <p>Press the <b>▶</b> key to go to Gateway Selection.</p> <p>Press the <b>◀</b> key to go to IP Address Selection.</p> <p>Press the <b>ESC</b> key to go to IP Setup.</p> <hr/> <p><b>Gateway Selection</b></p> <div data-bbox="933 1543 1377 1621" style="border: 1px solid black; padding: 5px; text-align: center;">           Gateway:            0.0.0.0         </div> <p>Press the <b>ENT</b> key and then press the arrow keys to change the Gateway. Press the <b>ENT</b> key to confirm the selection or <b>ESC</b> to cancel changes.</p> <p>Press the <b>◀</b> key to go to Netmask Selection.</p> <p>Press the <b>ESC</b> key to go to IP Setup.</p>

Main-level Screens	Second-/Third-level Screens
<p><b>Front-panel Help Timeout</b></p>  <p>Press <b>ENT</b> and then the <b>▲</b> or <b>▼</b> keys to select the front-panel help message timeout. Values of <b>3, 5, 10, 30,</b> or <b>60</b> seconds, or <b>No Timeout</b> may be selected.</p> <p>Press the <b>ENT</b> key to confirm the selection or <b>ESC</b> to cancel changes.</p> <p>Press the <b>▶</b> key to go to IP Setup.</p> <p>Press the <b>◀</b> key to go to Program Status.</p> <p>Press the <b>ESC</b> key to go to the Home Screen.</p>	
<p><b>Unit Reset</b></p>  <p>Press the <b>ENT</b> key to reset the unit and start the bootloader.</p> <p>Press the <b>◀</b> key to go to IP Setup.</p> <p>Press the <b>ESC</b> key or <b>▶</b> to go to the Home Screen.</p>	

## Web Browser User Interface

In addition to the front panel, the user may control and monitor the unit using the rear-panel Ethernet connection. Before using the Ethernet connection, the appropriate IP address, netmask, and gateway must be selected via the front-panel interface. There are two basic methods of using the Ethernet connection – with a directly connected PC or with a LAN connection.

### Locally connected PC –

Connect the DTV744 Ethernet connection to the Ethernet network connector on the PC using a crossover RJ-45 cable (8 pins).

Set the DTV744 IP Setup as follows: IP Address: 172.016.100.020 Netmask: 255.255.000.000 Gateway: 000.000.000.000

Set the PC IP address as follows:<sup>1</sup> IP Address: 172.016.100.001 Subnet Mask: 255.255.000.000

Connect to the DTV744 using the web browser instructions below.

### LAN Connection –

Connect the DTV744 Ethernet connection to the LAN using a normal RJ-45 cable (8 pins). Set the DTV744 IP Address, Netmask, and Gateway as directed by your network administrator. Use any PC on the LAN to connect to the DTV744 using the web browser instructions below.

### Using the Web Browser –

Using the web browser of your choice, set the Address to <http://nnn.nnn.nnn.nnn> where nnn.nnn.nnn.nnn is the IP address of the unit to be controlled. Each unit on the network must have a unique address. You should see the screens below when connected to the unit. You may select the screen viewed by clicking on the [Control and Status](#), [Stream Info](#), or [Q&A/Help](#) tabs.

The **Control and Status** tab (shown below) allows you to select the desired RF input video channels. Select the Broadcast radio button for off-air signals or the Cable radio button for cable television signals. Enter the channel number and click Tune. Under Outputs, you may select which RF input source supplies the stream for each ASI output. Choose the desired RF input from the drop down menu and click Set. Also on the left side of the page (under Control), you may select either Hexadecimal or Decimal Display Mode from the drop down menu and click Set to confirm.

<sup>1</sup> To change the PC IP address, go to the Settings, Control Panel and double click on the Network icon. Select Configuration, TCP/IP protocol, and click on the Properties box. Click on Specify IP Address and set the IP Address and Subnet Mask as indicated. Click OK to restart the PC with the new values.

The Status section on the right side of the page provides the status of each input and output signal. The status information is periodically updated automatically. Received signal parameters are labeled RF Input 1 through RF Input 4. These reports include frame lock status (true or false), signal-to-noise ratio (SNR in dB), errored seconds, and signal strength quality. ASI Output 1 through ASI Output 4 show which tuner is present on each of the ASI outputs. Any active alarms or warnings are displayed in red text beneath the status of the affected RF input.

# DTV744

DIGITAL TELEVISION PROCESSOR

Control & Status
Stream Info
Q & A / Help

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Serial Number: 257854 Version: 102

### Inputs

<input checked="" type="checkbox"/> RF Input 1	Channel: <input type="text" value="20"/> <input type="button" value="Tune"/>	<input checked="" type="radio"/> Broadcast <input type="radio"/> CATV
<input checked="" type="checkbox"/> RF Input 2	Channel: <input type="text" value="27"/> <input type="button" value="Tune"/>	<input checked="" type="radio"/> Broadcast <input type="radio"/> CATV
<input checked="" type="checkbox"/> RF Input 3	Channel: <input type="text" value="27"/> <input type="button" value="Tune"/>	<input checked="" type="radio"/> Broadcast <input type="radio"/> CATV
<input checked="" type="checkbox"/> RF Input 4	Channel: <input type="text" value="27"/> <input type="button" value="Tune"/>	<input checked="" type="radio"/> Broadcast <input type="radio"/> CATV

### Outputs

ASI Output 1	Source: <input type="text" value="RF Input 1"/> <input type="button" value="Set"/>
ASI Output 2	Source: <input type="text" value="RF Input 2"/> <input type="button" value="Set"/>
ASI Output 3	Source: <input type="text" value="RF Input 3"/> <input type="button" value="Set"/>
ASI Output 4	Source: <input type="text" value="RF Input 4"/> <input type="button" value="Set"/>

### Control

PID Display Mode	<input type="text" value="Hexadecimal"/> <input type="button" value="Set"/>
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### Status

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<b>RF Input 1</b>	Channel: 20 (Broadcast) Frequency: 509 MHz Modulation: 8VSB Frame Lock: TRUE TSID: 0x02e9 SNR: 30.8 (Very Strong) Errored Secs: 15 <a href="#">Clear</a>
<b>RF Input 2</b>	Channel: 27 (Broadcast) Frequency: 551 MHz Modulation: 8VSB Frame Lock: TRUE TSID: 0x02e5 SNR: 28.6 (Very Strong) Errored Secs: 117 <a href="#">Clear</a>
<b>RF Input 3</b>	Channel: 27 (Broadcast) Frequency: 551 MHz Modulation: 8VSB Frame Lock: TRUE TSID: 0x02e5 SNR: 28.3 (Very Strong) Errored Secs: 159 <a href="#">Clear</a>
<b>RF Input 4</b>	Channel: 27 (Broadcast) Frequency: 551 MHz Modulation: 8VSB Frame Lock: TRUE TSID: 0x02e5 SNR: 28.6 (Very Strong) Errored Secs: 24 <a href="#">Clear</a>
<b>ASI Output 1</b>	Source: RF Input 1
<b>ASI Output 2</b>	Source: RF Input 2
<b>ASI Output 3</b>	Source: RF Input 3
<b>ASI Output 4</b>	Source: RF Input 4

The **Stream Info** tab (shown below) displays complete data on each input and output stream. The left side shows the program streams contained in each RF input. The first item shown for each input is the short name and the major and minor channel numbers of the signal. Because a transport stream signal may contain more than one program, information on all programs in each RF input is given. The program number and the PID numbers of the PMT and PCR are shown for each program. This is followed by the PID numbers of all video, audio, and data PIDs in the stream. PIDs that are not included in the PMT are listed as Ghost PIDs. Note that channel and program numbers are always in decimal notation while PID numbers are shown either as decimal or hexadecimal depending on your selection on the Control & Status page. Decimal numbers are indicated as 123 while hexadecimal numbers are indicated as 0x123. The right side of the page shows the programs contained in each of the ASI output streams.

The right side (output) shows all programs included in the output stream (available at both ASI Out ports and the DHEI port). Below the service descriptor is the output program number (editable from the Configuration tab), PMT, PCR, and input source (by port and program number at input). Bulleted below that information is the list of video and audio (selected from the Configuration tab) included in the output stream for that program.

The **Q&A/Help** tab (shown below) provides answers to commonly asked questions about the DTV744.

<b>Environmental Operating Conditions &amp; Physical Specifications</b>	
Use	Indoor
Altitude	Up to 2000 meters
Temperature Range	0° C to +50° C
Relative Humidity (max.)	80% for temperatures up to 31° C decreasing linearly to 50% relative humidity at 40° C.
Weight	10.3 pounds or 4.67 kilograms
Dimensions (H x W x D)	1.75"x 19"x 13.5" or 44.5 mm x 483 mm x 343 mm
Input Power Rating	90 to 132Vac & 175 to 264Vac, <43 Watt, 50/60 Hz

### **Elevated Operating Ambient**

If equipment is installed in a closed or multi-unit rack assembly, the operating ambient of the rack may be greater than the room ambient. Therefore, considerations should be given to the TMRA, or Temperature inside the Mounting Rack, and not just inside the room.

### **Reduced Air Flow**

Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

### **Mechanical Loading**

Mounting of equipment in a rack should be such that a hazardous condition is not achieved due to uneven loading. This unit is not very heavy, but total rack loading should be considered.

### **Circuit Overloading**

Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits could have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### **Reliable Earthing**

Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connection to the Branch (use of power strips).

### **Desktop Installation**

To set up the DTV744 in a desktop environment, place it on a flat surface where it will not be subject to being hit or pushed, and will not have anything spilled or dropped on it. Also, the cables connected to the unit should be routed so they are not hit or pulled, which might cause damage to the connectors or to the unit itself. Additionally, there should be sufficient flow of cool air so the unit stays within its operating parameters.

### **Rack Installation**

When installed in an equipment rack, it is best that the DTV744 be supported by angle brackets or cross supports. These should be screwed or bolted securely to the equipment rack, and be capable of supporting the unit and its connecting cables. Do NOT install the unit if you have doubts about the unit being safely supported. There are also 4 holes in the front brackets, which are designed to accept screws for further anchoring. It is also essential that these brackets be used so the unit cannot be moved forward and fall from the rack. It is **always** best to install the angle brackets or cross-members before setting the unit in place. Then, prior to installing cables, put anchored screws or bolts-and-nuts into place on the front brackets. Failure to do this can lead to pushing the unit out the front of the rack in later steps.

### **Warranty**

The following warranty applies to all Wegener Communications products. All Wegener Communications products are warranted against defective materials and workmanship for a period of one year after shipment to customer. Wegener Communications' obligation under this warranty is limited to repairing or, at Wegener Communications' option, replacing parts, subassemblies, or entire assemblies. Wegener Communications shall not be liable for any special, indirect, or consequential damages. This warranty does not cover parts or equipment, which have been subject to misuse, negligence, or accident by the customer during use. All shipping costs for warranty repairs shall be prepaid by the customer. There are no other warranties, express or implied, except as stated herein.

### **Technical Support**

In the event the unit fails to perform as described, contact Wegener Communications Customer Service at (770) 814-4057, FAX (678) 624-0294, or E-mail "service@wegener.com".

Corporate Office  
Wegener  
11350 Technology Circle  
Duluth, GA 30097

Service Department  
Wegener  
359 Curie Drive  
Alpharetta, GA 30005